

TECHNOLOGY DEPT

May 23, 1953

VOL. 63 NO. 21 PAGES 321-336

# SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



Korea Bound

See Page 334

A SCIENCE SERVICE PUBLICATION

## Kodak reports to laboratories on:

high resolution plates... the mitigation of office drudgery... a reduction in the price of excess  $C^{13}$ ... a new projector for detailed study of 16mm movies

### High resolution

Kodak Spectroscopic Plates, Type 548-GH, compromise the conflict between high sensitivity and high resolution far in the direction of the latter. With suitable optics they can resolve more than 1,000 lines per millimeter, and yet they are only about twenty times slower than the Kodak Lantern Slide Plate. We have seen 70,000 well formed characters laid down in a 5-sq. in. area on these "548-GH's." It's done as a routine manufacturing operation, too.

Now, what with manufacturers getting ideas for these wondrous plates, while reticle makers, micro-radiographers, and sundry other enthusiasts continue to cry for them, we remove these plates from the "Kodak Spectroscopic" classification and turn the job of manufacturing them over from the laboratory to the factory. We highly resolve that under their new name of *Kodak High Resolution Plates*, they will continue to provide resolution as high as ever.

Kodak High Resolution Plates are sold by *Kodak Industrial Dealers*, generally after details about sizes, glass thickness, etc., have been cleared up in correspondence directly with Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y.

### Verifax copying

This young lady is demonstrating the new, revolutionary, and unique Verifax Printer, a form of salvation



from drudgery for millions of her typewriter-pounding sisters, including the one who works for you. Surely her time can be more profitably used than in copying reports, letters, cards, charts, etc., when a ready-to-use Verifax copy can be

made in a total elapsed time of 50 seconds, two more in the next 10 seconds, often as many as six from a single sensitized sheet. That sheet is a rather fundamental new development from the Kodak Research Laboratories. Roomlight-handling, it incorporates its own developer and dye-former. After reflex exposure within the machine, this sheet is "floated" into a built-in tray of activator. The whole sheet blackens in a few seconds, but wherever white space on the original document resulted in light exposure, the more vigorous development reaction releases a product which locally hardens the gelatin. The unhardened areas, representing what was dark on the original document, are now left soft and black and readily transferable to as many as six successive sheets of plain, dry, unsensitized paper pressed with it through a roller on the unit. If your young lady appreciates such niceties of physical chemistry—congratulations! But even if she doesn't, the copies will be just as good and still cost less than five cents apiece for three made from one matrix.

The Verifax Printer will sell for \$240. If you'll write to Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y., we'll arrange for a demonstration, as equipment becomes available in your locality.

### Ba $C^{13}$ O<sub>3</sub>

We've recently cut the price of *Barium Carbonate* from \$400 per gram of excess  $C^{13}$  to \$160 per gram. This is very special barium carbonate. Sixty to seventy percent of the carbon atoms in it are of the  $C^{13}$  species, as compared with the 1.1% abundance of this species of carbon atom ordinarily encountered wherever carbon occurs. We ask purchasers of it to specify not how much barium carbonate they want or even how much  $C^{13}$  they want (there is, of course, plenty of  $C^{13}$  all about you), but the weight of excess  $C^{13}$  desired. To people equipped with a mass spectrometer and engaged in tracer studies where radioactivity is a nuisance, it will also be gratifying news that we have

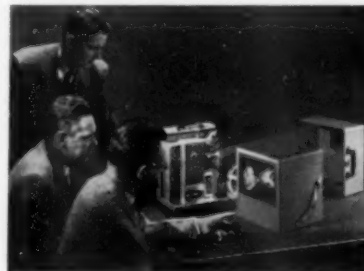
slashed prices on the other three  $C^{13}$ -enriched Eastman Isotope Concentrates we supply.

If you're interested in the details on Barium Carbonate (Eastman  $C^{13}$ -6020), or other Eastman Isotope Concentrates of  $C^{13}$  or  $N^{15}$ , write to Distillation Products Industries, Eastman Organic Chemicals Department, Rochester 3, N. Y.



### "Analyst" projector

This is for those who use 16mm movies for dispassionate purposes: the analysis of cavitation, of the motion of cilia, of malfunction in a tapping machine, of a girl assembling a cigarette lighter, of a sophomore's performance at tackle, and



so on through the myriad of applications of high speed and normal speed cinematography.

We now offer the Kodascope Analyst Projector for the minute study of silent 16mm film footage. It is specifically designed to be reversed and rerun all day long without a hitch, without overheating, and without blanking out at the instant of reversing. The blower fan keeps on blowing whether the film is moving or not because it is on a separate motor. Built right into the carrying case is the Kodak Daylight Projection Viewer. There is no need to turn the room lights off or pull down the shades and no need for a bulky screen. The reversing switch is on the end of a 5-foot cord for the benefit of a projectionist too excited to sit still.

For a demonstration of the Kodak Analyst Projector see a Kodak Industrial or Audio-Visual Dealer. Write Eastman Kodak Company, Cine-Kodak Sales Division, Rochester 4, N. Y., if you don't know where to find one. The machine currently lists at \$295.

All prices quoted are subject to change without notice.

This is one of a series of reports on the many products and services with which the Eastman Kodak Company and its divisions are... serving laboratories everywhere

**Kodak**  
TRADE-MARK

## AVIATION MEDICINE

# Space Travel Menace

Pilots in stratosphere in northern latitudes must be protected from heavy nuclei in primary cosmic rays, aeromedical expert believes. Shielding would have to be very thick.

► WHEN MAN flies into the stratosphere in the northern part of the world, it will be impossible to protect him from the heavy nuclei in primary cosmic radiation "unless one thinks in terms of a space platform or artificial satellite in which tons of fuel or other materials are to be stockpiled and could be placed around the crew compartment."

"Utterly discouraging figures" showing this were reported by Dr. H. J. Schaefer of the U. S. Naval School of Aviation Medicine, Pensacola, Fla., at the meeting of the Aero Medical Association in Los Angeles.

At extremely high altitudes, he explained, the heavy nuclei, part of the primary cosmic radiation, are a potential hazard to humans. These are essentially low energy nuclei, and protecting humans from the heavy nuclei means selective shielding of the low energy hits, called "thin-down hits."

The number of these thin-down hits to which a "standard man" at very high altitudes would be exposed has been calculated. They occur only at latitudes higher than 50 degrees north, which would take in that part of the world above Korea and the Aleutians and would include Alaska, most of Canada and northern Europe.

For the most harmful type of hit, nuclei of the element iron, the number of hits for a standard man increases from one hit per hour at 70,000 feet to 10 per hour at 80,000 feet or 100 per hour at 100,000 feet altitude. The total number of hits from all components of the heavy spectrum, carbon to iron, amounts to about 1,200 per hour at 80,000 feet.

But, Dr. Schaefer pointed out, peculiar relationships result if you calculate the thicknesses of compact materials, such as aluminum or steel, which could replace the shielding effect of the outer atmosphere for a ship flying entirely outside the atmosphere. The density of such materials is, by a factor of about 100,000, greater than the surrounding air in the heavy nuclei region.

The shielding layer of such material, it can be calculated, actually serves to intensify the number of thin-down hits to which man would be exposed, and the protective effect does not develop until several centimeters of aluminum are reached.

These are the "utterly discouraging figures" for any engineer trying to construct a ship with walls thick enough to protect the crew from heavy nuclei.

Protection, Dr. Schaefer suggested, would be possible only by limiting the exposure time so that the number of hits per day stays below the permissible level. What the permissible exposure is cannot yet be guessed.

Animal experiments are needed to learn this and they must be carefully planned as to the latitude and altitude of the flight and the appropriate amount of moderating absorbing layers for protection.

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## MEDICINE

## Growing Polio Virus Brings Quicker Diagnosis

► THE THIRD of the three known strains of poliomyelitis virus can now be made to grow in laboratory mice, Drs. C. P. Li and Morris Schaeffer of the Public Health Service's virus and rickettsia laboratory, Montgomery, Ala., have announced.

The achievement is expected to help laboratories to a cheaper and quicker method of diagnosing polio cases and to give a new tool for assessing the value of gamma globulin and vaccines in the pre-

vention and control of the disease. The method by which the third polio virus was adapted to growth in mice is reported in the *Proceedings of the Society for Experimental Biology and Medicine* (March).

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## PHYSICS

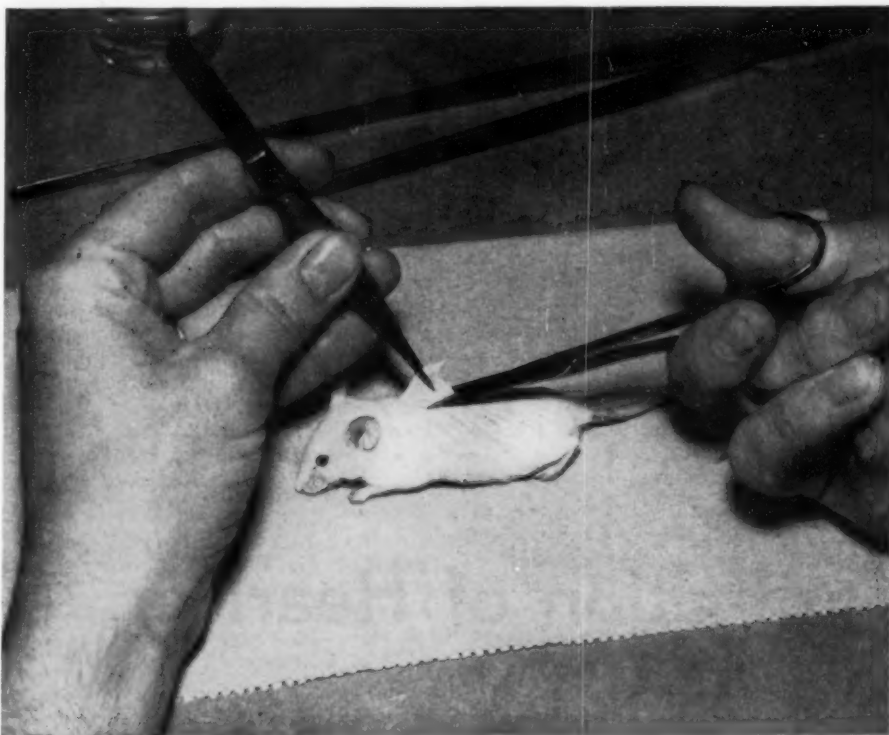
## Hovering Time of Charge Over Atoms Is Measured

► THE EXACT time that an electric charge hovers over one or another of the atoms in a molecule has now been calculated and reported.

By studying the hyperfine structure of the spectrum, Drs. J. Owen and K. W. H. Stevens of the Clarendon Laboratory, University of Oxford, England, have found that one particular atom of chlorine in the salt being studied held the charge for three percent of the time. For 18% of the time, the charge was held by some one of the six chlorine atoms in the complex ammonium iridium chloride whose spectrum was observed.

How the spectrum structure will be changed by substituting bromine for chlorine and potassium for ammonium in combination with the iridium will be investigated next. The research scientists report their findings in *Nature* (May 9).

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**GROWING POLIO VIRUS**—Latest advance in the fight against polio is discovery by Public Health Service scientists that the third virus type can be grown in mice. A development that makes this possible is the intraspinal inoculation of mice. After the mouse is anesthetized, its skin, as shown here, is clipped to expose the spinal column.



## METEOROLOGY

# Rain Making Doubtful

► THE NATION'S leading weathermen still are dubious about the alleged benefits of rain making.

"The conditions most favorable for the artificial release of precipitation," says the Council of the American Meteorological Society, "are very much the same as those which usually lead to the natural release of precipitation."

Statistical analyses by independent agencies, the Council declares, have failed to show that monthly or seasonal rain over a selected target area has been significantly increased by ground-based silver iodide seeding. The studies suggest that any increase has been relatively small.

This opinion of the Council of the A.M.S. differs from that issued two years ago in that more is now known about the actual results from seeding clouds with dry ice, silver iodide, small drops of water or salt

particles. The Council says that seeding a supercooled cloud with dry ice will usually convert at least a portion of the cloud to ice crystals. Some precipitation may result under certain conditions, the members say.

Seeding warm clouds with water droplets or salt particles may, in some instances, result in light rains, the Council admits. Certain other seeding agents may, in some cases, dissipate warm fog or warm stratus clouds. Silver iodide may produce some rain from supercooled clouds, but the evidence from experiments with silver iodide is not as convincing as that from dry ice experiments.

The Council concludes that "present knowledge of atmospheric processes offers no basis for the belief that the weather or climate of a large portion of the nation can be modified by cloud seeding."

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## GERONTOLOGY

# Senior Citizens Month

► THIS MONTH of May, which started with Child Health Day on May Day, is also being celebrated in New York State as "Senior Citizens Month."

The state's joint legislative committee is sponsoring this month for the oldsters because, says committee chairman Thomas C. Desmond, "we have found that (a) the general public is unaware of the great potential that exists among our elderly for continued activity and service in industry, families and communities, and (b) one of the great problems in this field is to change cultural attitudes about our elderly in our high-pressure, speed-mad, youth-worshipping society."

The committee finds these are the main needs of older people: 1. a chance to be useful; 2. a chance to be active; 3. the need to be loved and wanted; 4. the need for a decent income; 5. a chance to be a free human being, with dignity and respect.

Instead of looking on old people as "old

fogeys," "old fossils," and the like, the committee suggests the following positive attitude toward the senior citizens:

"Understand that old folks are people, that some may be crabby, many are not; that some persons at 35 are grouches; that an old grouch was a young grouch. It is important that we realize many an old person is cheerful, an inspiration and works well in a team.

"Many a man of 35 is set in his ways, while many a man of 70 retains an alertness to new ideas. Many a youth resents supervision, but old age is tagged unfairly as being unable to take supervision. Old folks can learn. Frequently oldsters do not want to learn because the learning material is unimportant, not meaningful. We know now old dogs can learn new tricks if the teacher knows more than the dog, knows how to teach and there is a good reason for learning."

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## PUBLIC HEALTH

# Protection of Hearing

► LIKE THE person who complains that "they are using smaller print these days," when his middle-aged eyes need glasses for reading, is the person who complains that friends and relatives are "mumbling" and not speaking loudly enough when actually the complainer is suffering from a hearing loss.

Loss of hearing may come gradually but it may also come almost without warn-

ing. That is why the American Hearing Society makes the first rule for hearing protection: Have your hearing tested with an audiometer at regular intervals.

If the test shows a hearing loss, you should consult your doctor to find the cause, have it corrected if possible, and if not, to get advice on hearing aids.

The American Hearing Society is working to conserve hearing and to help those

with a hearing loss. Besides the advice for audiometer tests, the society gives the following ways for protecting hearing:

Keep ears clean without using match sticks, or paper matches, metal objects, or harsh materials. (Let your ear doctor clean out accumulated wax.)

At the first sign of ear pain, or discharge, see your doctor! (Many cases of hearing loss can be prevented if infection is caught early and properly treated.)

Avoid swimming in uninspected pools or stagnant waters. (Ear infection can start from water remaining in the ear.)

Avoid violent blowing of the nose. (This may lead to infection in the middle ear.)

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VOL. 63

MAY 23, 1953

No. 21

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N. St., N. W., Washington 6, D. C., North 7-2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

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Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 3440, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566, and 360 N. Michigan Ave., Chicago, State 2-4822.

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**MAGNETS AID WARREN'S LEARNING**—Four-year-old Warren, a cerebral palsy victim, is learning, with the aid of toys with magnets in them, to do "action" things a child his age usually does naturally. Occupational therapist Ruth Brunyate helps him stack blocks that, without magnets, would not make a steady tower. Ordinary blocks tumble down due to Warren's inability to make his hands and fingers do what he wants them to do.

## PEDIATRICS

## Magnetized Toys Help

► BLOCKS, CARS and other toys with magnets in them are helping cerebral palsied children at Children's Rehabilitation Institute at Cockeysville, Md.

The children have suffered brain damage before or during birth that affects their muscular coordination and control but not their minds. At the institute they are taught to control their muscles so that they can, as many of them as possible, learn to walk, feed and dress themselves and go to school.

However, it is frustrating to these bright youngsters to have the small car or block roll away or fall when they are trying so hard to learn to grasp and manipulate it. Such frustrations may block their desire to learn, explains Miss Ruth W. Brunyate, occupational therapist at the institute. She and her associates, from study of this problem, hit on the idea of magnetizing the toys and other small objects so they would not fall off the metal topped tables the children work at.

Alnico magnets of the small size and shape were made for the institute by Crucible Steel Company of America which ordinarily makes permanent magnets for radio, TV and radar use.

Seventy-five boys and girls, ranging in

age from infancy through adolescence, are enrolled in the institute. The students come from all over the United States and from foreign countries. They are usually "graduated" back to the hospital or clinic near their home for continued treatment and training.

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## CHEMISTRY

## Chemical Cause of Ivy Itch Sought in Tests

► ANYONE HAVING an itch to analyze olefinic compounds should find interesting work at Columbia University's department of chemistry where they are taking poison ivy to pieces to see what makes it so mean.

In common with Japanese lac and the liquid from the shells of the cashew nut, poison ivy extract contains several chemicals somewhat related to carbolic acid. Drs. W. F. Symes and C. R. Dawson at Columbia have found that the new method of chromatography allows them to separate these poisonous components and learn what each is made of. The preliminary report appears in *Nature* (May 9).

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## SURGERY

## Radio-Phosphorus Tells When Bone Grafts Heal

► RADIOACTIVE PHOSPHORUS can help the doctor tell when a bone graft is "taking." Studies showing this were reported by Drs. Clifford L. Kiehn and Donald M. Glover of Cleveland at the meeting of the American Association of Plastic Surgeons in Edgewater Park, Miss.

The new method uses radioactive phosphorus as a tracer. It is injected into the patient immediately after the new piece of bone has been grafted into place. If the graft is successful, the phosphorus will be carried into the graft by the exchange of tissue fluid. Its presence can be readily detected in the graft because of its radioactivity. The amount of phosphorus in the bone increases in proportion to its development of new blood vessels.

The method is expected to be helpful particularly in cases when the graft is taken from a bone bank instead of the patient's own bones.

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## GENERAL SCIENCE

## Doctor of Psychology Degree Is Unrecognized

► IF THE man you plan to take your troubles to has the degree Doctor of Psychology (Ps.D.), beware! He is a charlatan!

This is the warning that will be presented in the *American Psychologist* (June) in an article by Dell Lebo of the psychology department of Florida State University.

No recognized college or university has ever granted the doctor of psychology degree, the article states. Properly qualified clinical psychologists have completed eight years of university training and have a Ph.D. degree in clinical psychology.

The degree of Doctor of Psychology is offered by correspondence schools. They are not necessarily fly-by-night institutions. Many are legally authorized to confer the degrees they offer. Some have been in business for 30 years or more.

A Ps.D. degree will cost the student about \$100. He need have no special educational background in order to enroll. And he can obtain the degree in a comparatively short time (a matter of weeks, perhaps) through an "easy study" course. And he receives an impressive, magnificently sealed diploma which he can have framed and hang on the wall of his consulting room.

One "Institute" offers a very special kind of doctor of psychology degree, the PsDH or doctor of psychology in hypnology. This degree costs \$150 and the student must have completed an earlier course in hypnosis. However, for convenience, the material of the earlier course is included in the material of the PsDH course. The student in the PsDH course receives ten lessons and two text books.

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## GENERAL SCIENCE

# Winning Science Projects

Four top winners, two in the physical sciences and two in the biological sciences, are awarded their "wish-list" prizes at the Fourth National Science Fair.

► A SIMPLIFIED way of dyeing Orlon, a homemade planetarium, a study of bees and research on rabbits captured first prizes for two boys and two girls from Virginia, Tennessee, North Dakota and Indiana at the Fourth National Science Fair held in Oak Ridge, Tenn. (See SNL, May 16, p. 381.)

The projects displayed at the fair amazed experts called in to pick the best exhibits. After five hours of deliberation, the judges, some of them world-famous scientists, announced a tie in second place awards.

First prizes, consisting of \$125 in scientific equipment desired by the winner, were awarded to the top boy and girl in each of the two exhibit classifications: physical sciences and biological sciences.

Doris Jean Hermes, 17, Martinsville (Va.) High School, took top honors for her simplified method of dyeing the synthetic, Orlon. She considers her method so successful that she has applied for a patent to protect it. She has studied problems related to the dyeing of Orlon for about 18 months.

John D. Rather, Jr., 15-year-old cadet at The McCallie School, Chattanooga, Tenn., also captured a first place award for his home projection planetarium. The planetarium's dome was too large to be included in the exhibit, but the projectors apparently pleased the judges' eyes. The youthful scientist used two projectors, one to show stars and the other to show sun, moon and planets.

First place award to a girl in the biological exhibits went to 17-year-old Patricia Ann Kirchoffner of Devils Lake, N. D. Her exhibit, titled "The Wax Workers," showed the importance of the honeybee, its honey and beeswax in everyday life. Part of her display showed actual bees at work.

The first place award to a boy in the biological science exhibits was taken by David Michael Young, 17, of Bluffton, Ind. In an "X-Ray Observation of Vesico-Ureteral Regurgitation in the Male Rabbit," the 17-year-old high school senior exhibited results of his tests on 21 male rabbits to determine the pressure at which vesico-ureteral regurgitation occurs. A summary of his findings said in part: "The occurrence of this phenomenon may account for many cases of renal infection both in the experimental animals and in the human."

Competition was so tough in the fair that the judges were forced to award six second-place prizes instead of the conventional four. The prizes, each totaling \$75 worth of scientific equipment desired by the winner, went to:

Carolyn Evans, 17, Martinsville (Va.)

High School for her exhibit showing methods she devised for proper dishwashing, and means of detecting improper dishwashing.

Larry Collins, 17, Classen Senior High School, Oklahoma City, Okla., for his homemade equipment demonstrating the mechanical CBS color television system.

Albert C. Petersen, Jr., 17, Farmington

(Conn.) High School, for his exhibit that shows the whole process of converting ore into iron and steel.

Stewart Tanner Traill, 17, Fountain Hill High School, Bethlehem, Pa., for his exhibit of a small, homemade cyclotron that actually works. The whole cyclotron was not shown because parts of it were too heavy to ship to Oak Ridge conveniently.

Peggy Lenderking, 16, Martinsville (Va.) High School, for her exhibit which shows how dandelions can be substituted for tobacco in cigarettes.

Travis Elton Stubblefield, 17, Denton (Texas) Senior High School, for his exhibit of cancers common to tropical fish. His exhibit was illustrated by color movies with synchronized sound.

Third place awards of \$50 in "wish-list" equipment went to:



SCIENCE FAIR WINNERS—Patricia Ann Kirchoffner shows "The Wax Workers" (upper left); David Michael Young demonstrates the results of his tests on rabbits (upper right); Doris Jean Hermes shows her exhibit illustrating a simplified way of dyeing Orlon (lower left), and John D. Rather, Jr., demonstrates his projectors for a planetarium. These young scientists were the four top winners at the Fourth National Science Fair held in Oak Ridge, Tenn.

Claire G. Vilandre, 18, Notre Dame High School, Central Falls, R. I., for her exhibit "Chromatography and Uses of Natural Flowers."

Jasper Ivan Rhode, 18, Jefferson High School, Lafayette, Ind., for his exhibit "Diffraction and Interference of Light."

Martial Leon Thiebaut, Jr., 16, Whittier (Calif.) High School for his exhibit of a Newtonian telescope.

Douglass Gray Saunders, 15, Oak Ridge (Tenn.) High School, for his photographic studies of radioactive substances in animal tissues.

Dr. Clarence E. Larson, Director of Oak Ridge National Laboratory and Chairman of the Board of Judges, said:

"All of the judges were surprised to see the high degree of scientific maturity which the exhibits expressed. Not only did the exhibitors manifest a command of the fundamentals but exhibited unusual ingenuity in the construction of their projects."

"The exhibits were of such high caliber that the selection of the winners was extremely difficult. After five hours of deliberation, the judges were still unable to break the tie for second awards so additional prizes were made available."

"These were made available by Union Carbide and Carbon Corporation which is serving as co-sponsor for the Fourth National Science Fair."

Other sponsors included Science Clubs of America, administered by SCIENCE SERVICE, local newspapers, technical societies, educational institutions, industries and the Oak Ridge Institute of Nuclear Studies.

Details on next year's fair, to be held at Purdue University, May 13-15, can be obtained from SCA, 1719 N St., N.W., Washington 6, D. C.

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#### ELECTRONICS

### Small Gobs Disrupt TV in Fringe Areas

► TELEVISION PICTURES in fringe areas are disrupted by small gobs, or air eddies, in the atmosphere. These eddies, about a thousand feet in diameter, scatter the wavelengths used in TV.

The air clumps differ from surrounding air in temperature and amount of moisture. Dr. H. E. Bussey and George Birnbaum of the National Bureau of Standards and R. E. Katz of the Naval Research Laboratory report they have measured such air gobs at heights up to 10,000 feet.

The clumps are spotted by measuring at the same time the moisture, wind speed, temperature and refractive index of air. Although the air seems to be pretty much the same throughout, these invisible "dielectric eddies" actually change the way in which short wavelengths are transmitted. Normal radio waves are apparently not affected by these clumps because they are much too long.

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#### ENTOMOLOGY

## Protection From Insects

Onset of insect season suggests use of insect repellents. Care should be taken in applying them to the body and to clothes, however, the U. S. Department of Agriculture warns.

► CHIGGERS, GNATS, mosquitoes and ticks will soon be making life miserable for the gardener, picnicker and camper. But you can protect yourself against this discomfort by using a good insect repellent.

Do not confuse repellents with insecticides. Repellents are applied to your skin or clothing to keep insects off; insecticides are used in the garden or elsewhere to kill insects, explains the U.S. Department of Agriculture.

Repellent preparations, usually in liquid, lotion or "cream" form, sell at drug, hardware or even grocery stores under different trade names. Among the most satisfactory chemicals as repellents are dimethyl carbate, dimethyl phthalate, ethyl-hexanediol and indalone. (The container usually lists the names of the chemicals in the repellent preparation.) Unlike some of the older repellents, the substances listed above have little or no odor and give protection from insects for several hours.

Repellents for mosquitoes, flies and gnats work best when they are applied directly to the skin and uniformly rubbed on the exposed areas. They should be renewed after two or three hours. They are safe for

use on the skin except where there are skin abrasions or where the skin is particularly tender, such as the eyelids.

Do not apply repellents too liberally to your forehead, as they cause a temporary, but rather severe, stinging if they get into your eyes. Repellents are oily materials and will feel somewhat sticky on your skin for a few minutes after application.

For protection from chiggers and ticks apply repellent to your clothing but not to your "Sunday-best." The chemicals are likely to spot or stain clothing and may damage synthetic fibers such as rayon or nylon. Likewise, plastics, paints, varnishes and fingernail polish can be damaged by repellents.

A few drops of repellent daubed around the top of your shoes and on your socks will give considerable protection. And applying the repellent to all the openings of clothing—waistbands, cuffs, collars—is very effective.

Cotton or wool clothing if it contains no synthetic fibers, can be sprayed or dipped in emulsions of the repellent and will effectively prevent chigger attack between washings.

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#### ZOOLOGY

## Reappearing Animals

► ALL THE man-shy creatures of the earth, like the retiring coelacanth—discovered in 1939 after 50,000,000 years of hiding, then rediscovered last December—do not have to skulk on the sea bottom to avoid man's curious eyes.

In fact, says the International Union for the Protection of Nature, there is a long list of good-sized animals prowling about on earth that seem to appear and disappear in a most perplexing manner.

The massive gorilla makes a good example. The ancient Greeks and Romans probably knew about gorillas, because their stories describe them. But then gorillas seemed to have dropped from the sight of civilized man, and were not rediscovered until 1847.

The golden hamster, reported in Syria in 1839, was not seen there again until 1930. A case nearer home is the rodent, *Plagiodontia aedium*, of San Domingo. It was recorded on the island in 1836 and did not turn up again until 1948.

The Schomburghk's deer of northern Siam and Yunnan, standing about 41 inches

tall, has never been seen in the wilds by Europeans. It would probably still be unknown to science if the natives, prizing the antlers for their "medicinal powers," had not sold them on the Siamese markets where scientists saw them. Only one complete mounted specimen of this deer has been obtained.

Science News Letter, May 23, 1953

#### INVENTION

### Patent Device to Hold Baby's Nursing Bottle

► A FRAME, with triangular-shaped supports and a bar between, holds a baby's nursing bottle in an invention recently patented. A clip which holds the bottle in the correct position is attached to the bar. The frame is placed across the baby so the bottle dangles into his mouth. Wingate Battle, Atlantic Beach, Fla., received patent 2,638,296. He assigned 20% to John E. Veith, Arlington, Va., and 20% to Norman R. Bronie, St. Petersburg, Fla.

Science News Letter, May 23, 1953



## PHYSICS

**Fast Nuclear Reactor, Clementine, Dismantled**

► CLEMENTINE, THE Los Alamos Scientific Laboratory's fast reactor, is now being dismantled after having been in almost continuous use since it first "went critical" in the fall of 1947.

It was the only known reactor of its kind, being fueled with plutonium and cooled by mercury, and its reaction was maintained by "fast" neutrons rather than by neutrons slowed to "intermediate" or "thermal" energies. It was one of two research reactors used by the Laboratory.

The second, known as the Los Alamos enriched homogeneous reactor, or more popularly as the "water boiler," is still in operation and will continue to be for an indefinite period.

Since there is little accurate information available at present as to what happens to the components of a reactor over a period of years, it is expected that Clementine's dismantling, and the subsequent study of its parts, will add valuable knowledge to the science of reactor development and operation.

Because the Laboratory no longer has a need for this type of reactor, Clementine will not be reassembled, but will be replaced by a different type of research reactor more suited to the Laboratory's present requirements.

Science News Letter, May 23, 1953

## BIOCHEMISTRY

**Salt Shows Two Stages Of High Blood Pressure**

► THE WAY the body handles salt may give doctors in the future a "relatively simple way" to distinguish two stages of high blood pressure and to plan for more effective treatment.

This possibility, based on studies with laboratory animals and observations of patients, was reported by Dr. D. M. Green of the University of Southern California, Los Angeles, at the meeting of the American Heart Association's Council for High Blood Pressure Research in Cleveland.

"It may also become possible," Dr. Green said, "to predict in which patients the risk of certain extensive surgical procedures is justified because of the poor chances of cure by any less extreme measure."

In his report, Dr. Green described the two groups into which he classified human beings suffering from the most common type of high blood pressure, known as essential hypertension. Patients in the first group, representing an earlier stage of high blood pressure, showed increased appetites for salt, and eliminated salt and water at greatly increased rates.

The second group of patients, representing a later phase of high blood pressure, had normal salt appetites and their rates of salt elimination were within or below the

range found in patients with normal blood pressure.

Dr. Green observed that in his earlier studies with animals, when injections of adrenal gland hormones were stopped or a completely salt-free diet was fed to those in the earlier stage, the blood pressure fell to normal and the symptoms disappeared. He also noted that these measures had no effect in the late stage of the disease. The blood pressure at that stage could only be reduced by removing the entire pituitary gland or the greater part of both kidneys.

Science News Letter, May 23, 1953

## CYTOLOGY

**New TB Diagnosis Takes Days, Not Weeks**

► THE TIME needed to diagnose tuberculosis can be cut to days instead of weeks by a method announced by Drs. John Buddingh and J. W. Brueck of Louisiana State University School of Medicine at the meeting of the Louisiana State Medical Society in New Orleans.

The method is to inject the yolk sac of a chick embryo with material from a patient thought to have tuberculosis. The embryo is then incubated for four days. The TB germs, or bacilli, if present in the inoculated embryo, can then be easily seen under a microscope.

Standard methods now used involve injection of a laboratory animal, usually a guinea pig, with material from the patient with positive results usually evident in three to six weeks, and use of a culture medium which takes two to six weeks or longer because the bacilli grow slowly.

The new method will also, the doctor said, help doctors learn more quickly the results of a new treatment of patients. It may also be useful in testing newly developed drugs for their effects on TB germs and might be adapted to test drug resistance of the germs.

Science News Letter, May 23, 1953

## INVENTION

**New Machine Forms Ice Cream for Cones**

► A MACHINE for forming balls of ice cream for cones will be a welcome summer addition to the records of man's ingenuity as listed in the U.S. Patent Office. The device received patent number 2,638,065.

The machine has a cup into which ice cream is forced. The cup is then turned upside down and knives, cutting around the interior surface of the cup, release it. The ball then drops into the cone.

The present invention deals particularly with an improvement in the operation of the knives which remove the ball of ice cream from the inverted cup. Robert G. Tarr, Villa Park, Ill., is the inventor, and he assigned one-half his rights to Jack C. Webb, Chicago, and the other half to Taft Moody, Memphis, Tenn.

Science News Letter, May 23, 1953

**IN SCIENCE**

## GEOPHYSICS

**Warmth of Earth's Heart Explains Magnetic Field**

► HOW WARM the heart of the earth is, a problem that can throw some light on her magnetism, has been measured by a new method.

Dr. J. A. Jacobs of the University of Toronto, Canada, has found that, by assuming that as pressure inside the earth increases the volume expansion due to the heat developed becomes less, his measurements agree with others made by independent methods. They contradict the recent theory of Dr. E. C. Bullard, published in the *Proceedings of the Royal Society*, that a liquid-like core spinning inside the earth like a dynamo could explain earth's magnetic field.

The amount of heat and what becomes of it are the questions that will decide between the two theories, in Dr. Jacobs' opinion. He finds that too much heat is demanded by Dr. Bullard's theory, even if the core were all made of radioactive iron, while his own theory gives results more consistent with observed temperature measurements.

The new temperature-pressure law is described in *Nature* (May 9.)

Science News Letter, May 23, 1953

## AVIATION MEDICINE

**Too Fast Tumbling in Plane Escape Dangerous**

► CREWMEN ESCAPING from a plane should not have to tumble at a rate faster than 90 revolutions per minute for three seconds or 50 rpm for two minutes, it appears from studies reported at the meeting of the Aero Medical Association in Los Angeles.

These figures apply with the center of rotation about the hips. Figured for the center of rotation about the heart, 25 to 30 revolutions per minute higher are safe.

At these rates, pain in the head region and tiny hemorrhages occur on the lining of the eyelids and covering of the eyeball, showing that blood circulation is being affected. The impairment of circulation at these speeds, however, was not serious.

Rates of tumbling between 180 and 240 rpm following seat ejection and free fall have been reported. Such rates may be a source of danger to the escaping crewman, Capt. Harold S. Weiss, Capt. Robert E. Edelberg, Lt. Paul V. Charland and Dr. J. I. Rosenbaum of the Aero Medical Laboratory, Wright-Patterson Air Force Base, Ohio, reported.

Science News Letter, May 23, 1953



# SCIENCE FIELDS

## TECHNOLOGY

### Paint Often Not Needed On Industrial Articles

► FROM A money-saving angle, industries sometimes are more justified to let a piece of equipment rust away through its useful life than to keep it shiny and trim under blankets of paint.

Clarence C. Harvey, Ethyl Corp., Baton Rouge, La., told the American Petroleum Institute meeting in New York that many metal articles can rust away without sacrificing utility.

But where paint is needed, it usually costs less to keep the paint in good repair than to allow it to fail, bringing on complications in the part being protected, he said.

Mr. Harvey also said he thought industry was putting too much emphasis on "painting to protect," and not paying enough attention to the decorative function of paint in industry.

Science News Letter, May 23, 1953

## MEDICINE

### Blackouts Major Cause Of Traffic Accidents

► IF THE "desire to speed, to show off, inattention and carelessness" are eliminated, a large percentage of persons who have accidents on the highways and in the air are those who have sudden weak spells, dizziness, fainting or, as they call it, a "blackout," Dr. Edgar E. Poos of Detroit declared at the Aero Medical Association meeting in Los Angeles.

Doctors, he said, are seeing more and more patients with these complaints, any of which in a pilot or motorist may cause a fatal accident.

"The aging of the population, stresses and strains of daily living, the anxieties, fears and tensions in the atomic and jet age" are probable causes of the greater frequency of these complaints.

In many cases there is a large emotional element. The patients "have a tendency to an emotional immaturity and find it hard to meet the realities of life," Dr. Poos said.

"Great fright, terrifying sights, bad news, apprehension and various other emotions may bring on these attacks. Some of the other common conditions are sight of blood, standing a long time, especially in hot weather, removing blood from the arm, vaccinations, shots in the arm while standing, severe pain, burns, acute or chronic infections, following prolonged bed rest, fevers, anemias, malnutrition and dehydration. These are often associated with fainting on assuming the upright position due to blood leaving the brain suddenly."

## Heart Field

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May 23, 1953

People who wear tight collars may black out or faint when they turn their heads while trying to park their cars because they have a sensitive carotid sinus.

Some people have normal blood pressure when lying down which drops when they stand up. They may have these faint spells.

Various heart conditions and either under or over ventilation may cause the symptoms. The cases, Dr. Poos advised, should be thoroughly studied to find the cause.

Science News Letter, May 23, 1953

## PSYCHIATRY

### Wives May Drive Husbands to Drink

► IT MAY be true that certain kinds of wives can drive their husbands to drink.

In trying to help the wives of alcoholics meet their problems, one psychoanalyst has discerned certain patterns in them. However, the psychoanalyst, Dr. Samuel Futterman of the University of Southern California, warns against over-simplification of the problem.

He said he began to see in the wives of alcoholics some basic insecurity which they had hoped would be taken care of by their marriages. The husbands, however, were also insecure and dependent, and therefore the wives developed feelings of resentment, aggressiveness and of being unloved. They put more and more demands on their husbands and thus the husbands became less and less adequate. Drinking was proof of this inadequacy.

Over-ambitiousness for social position or for the children seemed to be another pattern. This would put excessive burdens on the husband and would make him feel inadequate to his children, Dr. Futterman said.

Sometimes, if the husband's alcoholism is cured, the analyst said, then the wife's neurotic symptoms, fears and inadequacies would break out into the open.

Science News Letter, May 23, 1953

## INVENTION

### Patent Squirtless Grapefruit Knife

► A GRAPEFRUIT knife that promises to produce no squirting and which requires no effort on the part of the cutter or eater has been invented. It also leaves no mess, the inventor claims.

The knife has double blades that cut away the sides of two adjacent grapefruit segments on each side of a single web. At right angles to these two blades are two other blades which, simultaneously, cut the backs of the segments away from the rind of the grapefruit.

The inventor is Dean S. Conklin, North Hollywood, Calif. He assigned his patent, number 2,637,899 to Conklin Products Corp., Los Angeles.

Science News Letter, May 23, 1953

## INVENTION

### Trap Prevents Leaving Lot Without Paying Fee

► A TRAP prevents automobiles from leaving parking lots before paying their fees, but does not prevent cars from driving freely into the lot. It consists of a wedge in the driveway, with its point facing out of the parking lot and its base facing inward.

In trying to drive out, one front wheel hits the base of the wedge. When money is deposited in a slot, the wedge drops to the surface of the roadway. A car coming in depresses the wedge to the surface merely by driving over its point.

Inventor was the late Glen S. Stratton, New York. Robert M. Stratton, Cook County, Ill., the administrator, received patent number 2,637,920, which he assigned to Richard H. Hallsted, New Canaan, Conn., trustee.

Science News Letter, May 23, 1953

## ICHTHYOLOGY

### Here Is Tale of Tailless Goldfish

► THE CASE of the tailless goldfish began when some unknown creature—a turtle?—snipped off the entire tail of a goldfish in the outdoor aquarium of Dr. C. M. Breder, Jr.

When Dr. Breder, ichthyologist of the American Museum of Natural History, discovered the de-tailed fish, he tried to catch it. But the fish "wagged the stump with sufficient vigor to elude easy capture," he reports.

Five days later, the dead tissue about the wound was gone, and the flesh was smooth and pinkish. The fish's companions avoided this tailless thing whose over-weighted bow kept him pointed toward the bottom except when he paddled vigorously.

In another week, the fish's dorsal and anal fins were drawn backwards, probably by muscular contraction, giving the fish a rather effective substitute for a tail fin. Fifty-three days later, the tailless fish seemed completely adjusted; it swam with its companions, fed and grew at a normal rate. It did, however, spend considerable time "standing on its nose."

Anticlimactically, when fall approached, Dr. Breder placed the goldfish in an indoor aquarium; four days later, the tailless fish was dead.

An autopsy showed that 10 of the goldfish's tail vertebrae had been severed by the bite. The posterior chamber of the swim bladder had been suppressed in size, possibly a compensation for the disproportionate weight of the fish's anterior end. The fish's ovaries were well developed and filled with ripe roe.

Accounts of survival of fish that have lost their tails are fairly numerous in scientific literature. Dr. Breder listed 11 similar cases.

Science News Letter, May 23, 1953

## ASTRONOMY

# Saturn Shines in South

Planet with the famous encircling rings is prominent. Mercury may be glimpsed briefly for a few days around June 27. Longest days and shortest nights are now approaching.

By JAMES STOKLEY

► **HIGH IN** the southern evening sky, June's principal planet may now be seen. This is Saturn, famous for its encircling system of rings that are visible with a telescope of moderate size.

Its position is shown in the accompanying maps, which depict the appearance of the skies about 10:00 p.m., your own kind of standard time, at the first of June, and an hour earlier at the middle. (Add one hour if you are on daylight time.)

Saturn is in the constellation of Virgo, the virgin, just above Spica, the brightest star in this group, which it exceeds in brilliance by about 50%. Virgo is one of the 12 constellations of the zodiac, the part of the sky through which not only the planets, but also the sun and the moon, seem to move.

## Other Zodiacal Constellations

Just to the right of this figure is Leo, the lion, another of the zodiacal constellations, with the star called Regulus. It is at the end of the handle of "the sickle," a little group which is shown mainly on our northern sky map, though Regulus itself is in the southern section.

Following the zodiac to the left of Virgo we come to Libra, the scales, which contains no very bright stars. This is not true of the next, Scorpius, the scorpion, for the ruddy star Antares stands within its borders.

Above Virgo is Bootes, the bear-driver, with first-magnitude Arcturus. This star may also be found with the aid of the Great Dipper, which is in the constellation of Ursa Major, the great bear, high in the northwest. At the bottom of the dipper are the pointers.

Following their direction to the right brings one to Polaris, the pole-star, in Ursa Minor, the little bear. The curve of the dipper's handle, if followed toward the south, leads first to Arcturus and then to Spica.

## First Magnitude Stars

Toward the east and northeast three more stars of the first magnitude are with us on June evenings. Brightest is Vega, in Lyra, the lyre. Below this group is Cygnus, the swan, with the star Deneb. Some of the stars in this figure form a cross—the Northern Cross—in which Deneb marks the top, now directed downward to the left.

Just to the right of Cygnus is the tiny and inconspicuous constellation of Sagitta, the arrow, and then Aquila, the eagle. This is marked by another bright star, Altair.

Low in the northwest our map of the northern sky shows two more stars actually of the first magnitude, though they are now so near the horizon that their brilliance is greatly dimmed. One is Pollux, in Gemini, the twins—another constellation of the zodiac. Next, to the right, Auriga, the charioteer, with Capella.

These are now making their last stand after shining brilliantly during winter months. Soon they will vanish completely from the evening sky, to reappear next autumn.

Although Saturn, which is visible through the night until a little before dawn, is the only planet easily seen in June evenings, another may be briefly glimpsed for a few days around June 27. This is Mercury, which then will be farthest east of the sun and will set about an hour and a half after that body—before it is completely dark.

## Venus Now Morning Star

Venus is now in the morning sky, shining brilliantly after it rises about two and a half hours before the sun. Mars cannot be seen at all in June, nor can Jupiter during the first part. However, by the end of June this great planet will rise more than an hour and a half before the sun, and may be seen low in the east at dawn.

A welcome astronomical event comes at noon, EST, on June 21 when summer commences in the Northern Hemisphere. At that time the sun reaches the northern limit of its annual journey in the sky. For people of countries to the south of the equator this

brings it to its lowest position of the year and thus it marks the beginning of winter.

With the coming of June we in the Northern Hemisphere have the longest days and the shortest nights. At 40 degrees north latitude, for example, it is a little less than nine hours from sunset to sunrise on the day of the solstice, which is the beginning of summer. At more southerly latitudes, the difference between night and day is less, until at the equator the two are approximately equal, as they are throughout the year.

## Areas of Long Twilight

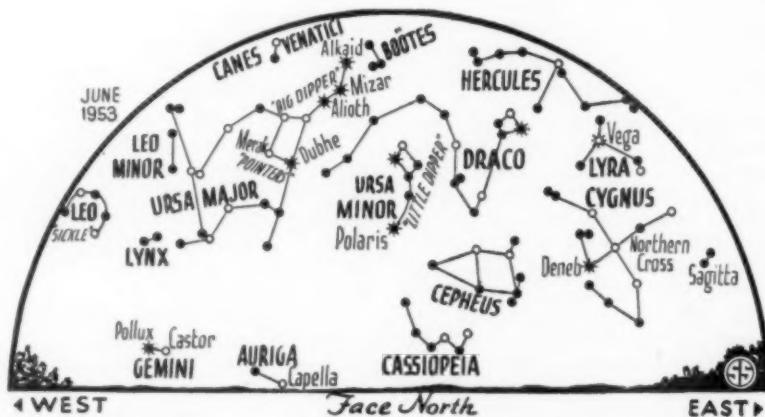
But traveling northwards, the difference becomes still greater. In fact, on June 21 in the entire region from the North Pole to the Arctic Circle, the sun does not set at all. By the same token, in the area from the South Pole to the Antarctic Circle, the sun will not rise on that day.

One does not need to go north of the Arctic Circle, however, to find regions where the nights do not get very dark. Twilight, in the astronomical sense, lasts in the evening until the sun is 18 degrees below the horizon, and begins in the morning when it reaches that position on its way toward sunrise.

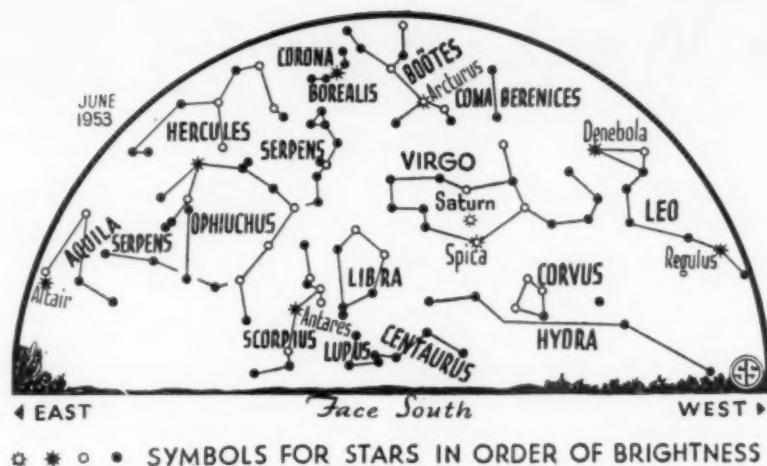
At the time of the solstice, twilight lasts for a little more than two hours after the sun goes down, and begins about the same period before the sun appears. Thus, even in the United States, around the 20th of June, there are only about five hours of real night, when it is dark enough to see the faintest stars.

Along the parallel of 45 degrees north latitude, which passes across Nova Scotia and Maine, then near Montreal and Ottawa, St. Paul, Yellowstone Park and Salem, Ore., only about three hours and 20 minutes elapse from the end of twilight in the evening until it begins again in the morning.

At the 50-degree parallel, which crosses Canada from Newfoundland to Vancouver







Island, and passes near Winnipeg, Regina and Medicine Hat, the sun never gets as much as 18 degrees below the horizon even at midnight. At this latitude, from June 2 to July 12, twilight lasts all night.

Twilight results from the reflection of sunlight from the upper atmosphere. For some time after the sun has set, as seen from the ground, it would still be visible from an airplane high overhead. Thus the air above us is illuminated well after sunset and still sends us some reflected light until the sun is so far below the horizon that no part of this illuminated air remains in view from the ground.

On the average, when it is 18 degrees below the horizon and the rays of sunlight pass 50 miles overhead, the sky above is so dark that stars of the sixth magnitude—the faintest that can be detected by the naked eye—are visible. This is astronomical twilight, as given above.

However, there are other stages of twilight as well. Civil twilight is considered to end when the sun is six degrees below the horizon. This is about the time that automobile headlights have to be turned on according to the traffic regulations in many states.

#### FORESTRY

## Oak Wilt Spreading

► TEN YEARS ago, the death-dealing fungus causing oak wilt, now known as *Endoconidiophora fagacearum*, had been spotted only in three states, Wisconsin, Iowa and Minnesota. Today it has fanned out over 18 states, in some areas killing over 50% of large oak stands.

If left unchecked, oak wilt may eventually spread over the entire eastern half of the United States, declares Marvin E. Fowler, forest pathologist with the U.S. Department of Agriculture.

Losses would be tremendous if the disease managed to spread through the great oak forests of the Ozarks, lower Mississippi valley and the East, Mr. Fowler warns.

Then there is also nautical twilight, which ends when the sun has gone down 12 degrees. During this time the brightest stars can be seen, but the sea horizon is still visible, so the navigator of a ship can measure their altitude with his sextant to determine his position.

To get to places where civil twilight lasts all night, one has to go considerably farther north—to Sweden or Alaska, for example.

#### Celestial Time Table for June

June	EST	
4	12:35 p.m.	Moon in last quarter.
5	9:00 a.m.	Moon nearest, distance 229,700 miles.
8	3:22 a.m.	Moon passes Venus.
11	9:55 a.m.	New moon.
18	4:00 p.m.	Moon farthest, distance 251,100 miles.
19	7:01 a.m.	Moon in first quarter.
21	10:34 a.m.	Moon passes Saturn.
	12:00 noon	Sun farthest north, summer commences in Northern Hemisphere.
22	5:00 a.m.	Venus farthest west of sun.
26	10:29 p.m.	Full moon.
27	12:00 noon	Mercury farthest east of sun.
30	7:00 p.m.	Moon nearest, distance 228,300 miles.

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, May 23, 1953

#### ZOOLOGY

## Animal "What's What" Lists Unusual Names

► "SO YOU think you know the animals?" asks Francis H. Elmore, park naturalist at Yellowstone National Park.

To prove that you may not, as he found out he did not, Mr. Elmore collected a four-page listing of the male, female, neuter and young names applied to animals besides their regular "family" names.

Try yourself out on a few. Maybe you are a better naturalist than you think. (Answers are found following all the questions.) Name the animals whose young are sometimes called: (1) stirk; (2) scrod; (3) eyas; (4) bullhead; (5) squealer; (6) brit; (7) stot; (8) kit; (9) graul; (10) teg.

(Answers: (1) cattle; (2) cod, haddock; (3) falcon; (4) bullfrog, toad; (5) grouse, partridge, quail, pigeon; (6) herring; (7) horse, ox; (8) muskrat, mink; (9) salmon; (10) sheep.)

What is the name of the young of: (1) chimpanzee; (2) jackrabbit; (3) green turtle; (4) whale?

(Answers: (1) infant; (2) kitten; (3) chicken; (4) calf.)

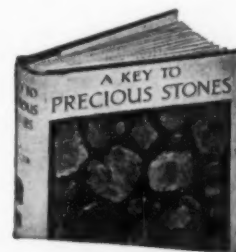
What do you call a: (1) female falcon; (2) female fish; (3) female owl; (4) male red deer; (5) male sandpiper; (6) female swan; (7) male terrapin?

(Answers: (1) haggard; (2) hen; (3) jenny howlet; (4) hart; (5) ruff; (6) pen; (7) bull.)

Did Mr. Elmore make his point?

Science News Letter, May 23, 1953

Taste panels have been able to spot water containing one tablespoon of salt in 10 gallons.



## A Key to Precious Stones

By L. J. SPENCER

Formerly Keeper of Minerals, British Museum

"The author has set a high standard for popular works on scientific subjects. By avoiding technical treatment and using simple language he introduces the reader to the fundamentals of the subject. Well-worn facts are given new lustre and recent discoveries are presented in a manner that is intelligible to the layman. Within the compass of a small, inexpensive book, provided with a good index, is collected considerable information formerly scattered through a voluminous literature, including much that is new to the advanced student."—*Mineralogical Magazine*.

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Science News Letter, May 23, 1953

# Books of the Week

For the editorial information of our readers, books received for review since last week's issue are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N Street, N. W., Washington 6, D. C. Request free publications direct from publisher, not from Science Service.

**ARCHAEOLOGY IN THE FIELD**—O. G. S. Crawford—*Praeger*, 280 p., illus., \$8.50. Surveys the history of field archaeology, its close connection with aerial maps, and makes detailed suggestions about the prospects of field-work.

**CARDANO, THE GAMBLING SCHOLAR**—Oystein Ore—*Princeton Univ. Press*, 249 p., illus., \$4.00. Biography of the Renaissance physician who made the first organized study in the theory of games of chance.

**THE CHARACTERIZATION OF ORGANIC COMPOUNDS**—Samuel M. McElvain—*Macmillan*, rev. ed., 303 p., illus., \$4.50. Sections and experiments dealing with the selection and preparation of derivatives have been completely revised.

**ELEMENTARY ELECTRICITY FOR TECHNICAL STUDENTS, VOL. I**—A. C. Davies—*Cambridge*, 132 p., illus., \$1.50. Stresses the many practical applications of effects of currents.

**ENGINEERING: A Creative Profession**—*Engineer's Council for Professional Development*, 32 p., illus., paper, 25 cents. For the youth interested in engineering, this answers many questions about the profession.

**EXPLORATIONS IN SCIENCE**—Waldemar Kaempffert—*Viking*, 296 p., \$3.50. Revised and amplified articles by the science editor of the *New York Times* which have appeared previously in various journals.

**THE FIRST BOOK OF SAILING**—Marion Lineweaver—*Franklin Watts*, 69 p., illus., \$1.75. A practical guide to the how's and why's of sailing. Ages 7-12.

**FLUID DYNAMICS: Vol. IV**—M. H. Martin, Ed.—*McGraw-Hill*, 186 p., illus., \$7.00. Contains 14 papers on fluid dynamics presented at the Fourth Symposium on Applied Mathematics.

**HIGH ENERGY NUCLEAR PHYSICS: Proceedings of the Third Annual Rochester Conference, Dec. 18-20, 1952**—H. P. Noyes, M. Camac, and W. D. Walker, Eds.—*University of Rochester (Interscience)*, 110 p., illus., paper, \$2.00. Discussions of over one hundred physicists in the field of high energy physics.

**HYPNOTHERAPY IN CLINICAL PSYCHIATRY**—Harold Rosen—*Julian Press*, 313 p., \$5.00. A study of the use of hypnotic methods in psychiatry. With case histories.

**INORGANIC CHEMISTRY: A Text-Book for Advanced Students**—E. de Barry Barnett and C. L. Wilson—*Longmans, Green*, 512 p., illus., \$7.00. The elements and their more important compounds are described according to the Bohr classification.

**THE INSIDE STORY: Psychiatry and Everyday Life**—Fritz Redlich and June Bingham—*Knopf*, 280 p., illus., \$3.75. By means of cartoons and a text free of professional jargon, psychiatry's basic discoveries are related to everyday life.

**LIFE ON THE EARTH**—Rose Wyler and Gerald Ames—*Schuman*, 143 p., illus., \$2.50. Tells what life is, and how man became supreme

among the creatures of the earth. For the junior high school student.

**MANTA: Under the Red Sea with Spear and Camera**—Hans Hass, trans. by James Cleugh—*Rand McNally*, 278 p., illus., \$4.50. Reveals life in the undersea world.

**MECHANICAL ENGINEERING THERMODYNAMICS**—David A. Mooney—*Prentice-Hall*, 540 p., illus., \$7.00. An introductory book on the principles of thermodynamics and their applications in mechanical engineering.

**MENTAL HEALTH: Everybody's Business**—Katherine Glover—*Public Affairs*, Pamphlet No. 196, 28 p., illus., paper, 25 cents. Sets forth the goals of the mental health movement.

**MINERALS YEARBOOK, 1950**—Leonard L. Fischman, Ed.—*Government Printing Office*, 1690 p., illus., \$4.50. Contains basic data and statistics on the minerals of the world.

**THE MOON**—George Gamow—*Schuman*, 118 p., illus., \$2.50. Covers its history, results of current observations, and rocket flights of the future. For secondary school students.

**NEW ZEALAND POLLEN STUDIES, THE MONOCOTYLEDONS: A Comparative Account**—Lucy M. Cranwell—*Harvard Univ. Press*, Bul. of the Auckland Institute and Museum No. 3, 91 p., illus., paper \$3.50, cloth \$5.00. Primarily covers their morphology.

**NOISE, ITS EFFECTS AND COST**—Sam L. Hooper—*Mellon Institute*, 7 p., paper, free upon request direct to publisher, 4400 Fifth Avenue, Pittsburgh 13, Pa.

**THE ORIGIN OF LIFE**—A. I. Oparin, trans. by Sergius Morgulis—*Dover*, 2nd ed., 270 p., illus., paper \$1.70, cloth \$3.00. Sets forth Oparin's theory that the origin of life was preceded by a gradual and long evolution of organic substance.

**PHILOSOPHY AND THE IDEOLOGICAL CONFLICT**—Charles S. Seely—*Philosophical Library*, 319 p., \$5.00. An analysis of "Idealism" and "Materialism" and the influence of these philosophies on the over-all world struggle between capitalism and socialism. It presents a case for "the modern materialism" of the Communists.

**A POLICY FOR SCIENTIFIC AND PROFESSIONAL MANPOWER**—National Manpower Council—*Columbia University Press*, 263 p., illus., \$4.50. This recommends methods of increasing the supply of scientific and professional workers to meet the demands of the modern world.

**PRIZE SCIENCE FICTION**—Donald A. Wollheim—*McBride*, 230 p., \$3.00. The twelve stories of 1952 that won the Jules Verne award for outstanding merit in science fiction.

**SCIENTIFIC EXPLANATION: A Study of the Function of Theory, Probability and Law in Science**—Richard B. Braithwaite—*Cambridge*, 376 p., \$8.00. Examines the logical features common to all the sciences.

**SHORT DICTIONARY OF MYTHOLOGY**—P. G. Woodcock—*Philosophical Library*, 156 p., \$3.75.

Contains the most common names found in the classics and mythology.

**SILICONES IN PHARMACY**—R. R. McGregor—*Mellon Institute*, 4 p., illus., paper, free upon request direct to publisher, 4400 Fifth Avenue, Pittsburgh 13, Pa.

**TOTAL ATOMIC DEFENSE**—Sylvian G. Kindall—*Richard R. Smith*, 224 p., \$3.00. Advocates the complete dispersion of our cities and the removal of the national capital to the Rocky Mountain National Park.

**THE WAY OF SCIENCE: Its Growth and Method**—John Somerville—*Schuman*, 172 p., illus., \$2.50. Traces the development of both natural and social science, and explains how scientific knowledge differs from other knowledge. For junior and senior high schools.

**WEATHER INFERENCE FOR BEGINNERS: Made Clear in a Series of Actual Examples**—D. J. Holland—*Cambridge*, 196 p., illus., \$6.00. Based on the observations of the author in his youth, this illustrates the analysis and forecasting of weather in England by means of local observations and charts.

**WORLD IN THE MAKING: The Story of International Cooperation**—James A. Joyce—*Schuman*, 159 p., illus., \$3.50. Reviews the series of episodes in the growth of our world that have led to increased international cooperation.

Science News Letter, May 23, 1953

## EDUCATION

### Educational TV to Enlist Telescope, Microscope

► PEOPLE SOON will be looking through a high-power microscope or a high-power telescope as on their television screens.

This was the promise for educational television stations as outlined at the First National Conference on Educational Television in Washington. Ideas for many different kinds of programs dealing with science were outlined for the benefit of more than 250 delegates.

Tiny organisms found in ponds, bacteria, molds and other small living things could be shown on a TV screen through the use of a microscope, it was explained. The solar system could be brought into everybody's home with the big telescopes now scanning the skies.

It is possible to demonstrate strikingly the function and role in the body's economy of all the body's organs. Another program could deal with plants and their growth—from how to grow a lawn to a discussion of the relation between geological formations and the plants in one area.

How to tell the age of an object that might be 20,000 years old with the aid of radioactive decay of a carbon isotope might be the subject of another TV educational program. A study of the history of the discovery of the 98 chemical elements could be made into a fascinating program.

Most of these educational TV program ideas came from the University of Chicago Committee on Educational Television.

Science News Letter, May 23, 1953



## ENGINEERING

# "Jack Up" Mexico City

Engineers will try to keep Mexican capital from sinking by pumping water back into subsoil. Difficulties of constructing large new buildings solved by "floating foundations."

► IN AN effort to "jack up" Mexico City, which has been sinking at an increasing rate—a foot a year since 1948—experiments have been started to pump water back into the subsoil by means of "rehydration wells."

The Hydrologic Commission of the Valley of Mexico has been studying ways to solve the two major problems: water supply for the city of almost 3,000,000 people, and the sinking of the ground level which is being accelerated as more water is being pumped out to supply more people.

The sinking that has lowered certain sections of the city 20 feet since 1900 is due to the fact that the clay subsoil of the Valley of Mexico is highly compressible, in certain zones being composed of 85% water and 15% solid material. Comparatively, for example, the subsoil of Boston is composed of 40% to 50% water and 60% to 50% of solid material.

Mexican hydraulic engineers call this situation "depression," or a lack of pressure. They plan to restore the equilibrium by means of newly-installed rehydration wells, pumping the overflow rain water during the rainy season, from June to September, down into the subsoil.

This will have the further effect of solving one of the city's major problems, flooding of the lowest areas during heavy rainfalls. Last year, after prolonged rainfall, many downtown streets were like canals and were negotiable only by small boats. The water overflowed onto the sidewalks and into stores, causing hundreds of thousands of pesos of damage in ruined merchandise, to say nothing of complete disruption of transportation in those areas.

Sometimes the modern inhabitants feel that the Aztecs might have picked a better location for their capital city than situating it in the middle of a lake. Indian engineers struggled with the problem before the Spaniards' arrival, and constructed dikes and canals to keep the waters under control. Their histories record at least three major inundations before Cortes conquered their empire. In the period from 1517 to 1900, 13 major floodings are recorded, some so great that inhabitants moved out and up into higher levels and waited for the waters to subside.

One of the most striking aspects of the sinking problem in the past has been the difficulties in construction of large buildings in the Mexican capital. With expert help from engineers from all over the world, modern Mexican buildings are now erected on "floating foundations" that allow the buildings to adapt themselves to the fall of the ground level, and in the last ten years,

for the first time, the sky line is being marked with buildings over 15 stories high.

Of course, the "sinking city" has its romantic note. As the rest of the city sinks in varying degrees, the Monument to Independence—a golden angel atop a high marble column—has been rising. And no one asks or wants to know the "scientific" explanation for this comforting phenomenon.

Science News Letter, May 23, 1953

## PSYCHIATRY

## Fearing Insomnia May Cause It

► FEAR OF not being able to sleep is one of the commonest causes of sleeplessness, or insomnia, says Dr. Gudmund Magnussen, Danish psychiatrist.

In a report to the National Association for Mental Health in New York, he states: "Sleeplessness may develop from some adventitious cause, which in itself results in one or two sleepless nights, but these appear to the person to be so dreadful, that he looks to the coming nights with the greatest concern and anxiety."

The fear dispels any possibility of sleep, and a chain reaction of sleeplessness is set up night after night.

In general, Dr. Magnussen states, any intense emotional experience, whether it be a pleasurable emotion like joy, or a depressing emotion like grief or worry, is apt to result in sleeplessness. This is because emotions set off brain reactions which interfere with the functioning of the sleep center located in that part of the brain known as the hypothalamus.

Quiet, darkness, absence of physical illness and pain are external conditions needed for good sleep. In addition, certain internal conditions are necessary, the most important of which is absence of emotional disturbance.

In some persons, such disturbance may be so severe that they need psychiatric treatment. In others, simpler remedies will help. Dr. Magnussen prefers, if drugs are used, to give sedatives which quiet the emotionally upset state, rather than hypnotics which bring on sleep without necessarily quieting the emotions.

Simple home remedies, such as a light, late supper but not a heavy one, just before bedtime, or a glass of beer or wine before bedtime help many insomnia sufferers. Practicing a simple ceremonial every night before going to bed is a method that is helpful to many.

Science News Letter, May 23, 1953

## RADIO

Saturday, May 30, 1953, 3:15-3:30 p.m. EDT  
"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Prof. Joseph D. Danforth, chemist, Prof. Grant O. Gale, physicist, Prof. G. Mendoza, biologist, Prof. Henry Weston, biologist, and President Samuel N. Stevens, all of Grinnell College, Grinnell, Iowa, discuss "Research in a Small College."

## ELECTRONICS

## Ingot Process May Cut Transistor Cost

► INGOTS OF precious germanium have been successfully produced by a method that promises to revolutionize the manufacture of transistors.

Transistors are rugged pea-sized chunks of germanium that can perform many jobs now done by vacuum tubes. They can be used in radios, television sets, hearing aids and giant electronic "brains." They are valuable because they conserve space and electric power, because they are rugged and because they last longer than vacuum tubes under the proper conditions.

As many as 100 wafer-thin layers of specially treated germanium can be produced in a six-inch ingot by the method developed by Dr. Robert N. Hall of the General Electric Research Laboratory, Schenectady, N. Y. Only one or two layers can be produced by other methods.

Still in a "laboratory stage," the method turns out germanium layers mixed with a trace of gallium. These layers are separated by thicker regions of germanium containing antimony.

One section of the "gallium-doped" layer in each transistor does the work of the grid in a vacuum tube, Dr. Hall explained. The "antimony-doped" layers take the place of the cathode and plate in a tube.

This "mass" transistor production is expected to cut transistor cost. At present the revolutionary electronic devices cost more than vacuum tubes.

Science News Letter, May 23, 1953

**LISTEN and LEARN a LANGUAGE by LINGUAPHONE** **IN 20 MINUTES A DAY**

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## INVENTION

**Head Protector  
For Fighter Pilots**

➤ A SPECIAL helmet which holds the pilot's head firmly against the buffeting which sometimes results from high speeds has been invented. The helmet allows the pilot to move his head about freely during normal flight, but when there is sudden acceleration or deceleration, the pilot's head is restrained against these dangerous movements.

The helmet is connected to inertia reels which grab hold during such movements and which release when the danger is over. It is used in connection with an anti-buffeting seat, previously patented.

The helmet and its inertia reels are also connected with the pilot's ejection seat. They go into operation whenever the pilot has to pull the switch which sends him and his seat hurtling out of the fuselage to begin a parachute descent to the ground. The restraint automatically lets go when the pilot has been slowed down to a less dangerous velocity.

Frithjof J. Lindstrom, Stratford, Conn., the inventor, has assigned his patent, number 2,638,293, to United Aircraft Corporation, East Hartford, Conn.

Science News Letter, May 23, 1953

## MARINE BIOLOGY

**Clams Do Not "Clam Up";  
Give Up Scientific Secrets**

➤ THE CLAM has always enjoyed a reputation for reticence, but now it is giving up secrets of considerable interest to scientists.

So says Dr. K. P. Rao, marine zoologist from India, who is doing research at the University of California at Los Angeles on the "living rate" of shellfish. He defines living rate as "the efficiency in utilization of elements taken in by the animal."

Dr. Rao has found that clams live "faster" at high tide than at low tide, and that this variation continues at periods corresponding to tide levels even when the clam is placed in a laboratory aquarium.

He has also found that clams live "faster" at lower depths than nearer the surface, and that northern clams live "faster" and have thicker shells than those in southern waters.

The variation in living rate with tide levels is still somewhat of a puzzle. One theory is that clams become conditioned to changes in water pressure due to the tides, and this response continues regardless of environment.

There is, however, a clue to the shell thickness differences. Clams can take in calcium, much of which is deposited in the shell, directly from sea water. It is known that calcium ions are more available in cold water than warm water. Perhaps for this reason the colder the water, the thicker the shell, says the Indian zoologist.

Science News Letter, May 23, 1953

## ECOLOGY

**NATURE  
RAMBLINGS****More Than Trees Die**

➤ MORE THAN trees die when a forest is burned. Loss of the lumber and other tree products is grievous enough, but even so it is only one item in the sum of the disaster.

Many of the rest are tangible items, assessable in dollar damages. Others are not so easily itemized, but their value will be recognized none the less, even by the most utilitarian.

Forests are inhabited places, shelters for all manner of beasts and birds. The fate of these, in a major forest fire, is dreadful: terrified flight until limbs or wings will no longer carry them, then agonized death in

the flames. Afterwards—no sport for the hunter with either gun or camera, over that blackened area, perhaps for several human lifetimes.

Fish, too, are sufferers. Forest streams are typically cool and swift—the kind of water that trout delight in. In the worst forest conflagrations, the fish are often killed outright by the sheer heating of the water; but even where the fire is not severe enough for that, the after-consequences are just as fatal to the fish.

Polluted with poisons from roasted plants and dead flesh, befouled with charred fragments of destruction, muddied by soil exposed to erosion, heated by the beating sun with no more leafy canopy to intercept it, the streams become totally unfit to support the kind of life they once contained. They become slum waters, or even dwindle to mere trickling remnants of their former selves.

The very soil itself becomes the victim of a forest fire. The forest floor is a complex always in a delicate state of balance. Roots of trees and lesser plants, burrows of mice and moles, myriads of insects and worms and other creeping things, and unseen hosts of micro-organisms are all essential parts of it. Their death leaves the soil mere carrion, no more a soil than a charred trunk is a tree, or a live-roasted carcass a deer or a grouse.

Fire season in the western forests will soon approach its height. It is to be hoped that all Americans who have occasion to be in our national forests this year will observe very carefully the order of the day: "Hold your fire!"

Science News Letter, May 23, 1953

## BIOCHEMISTRY

**Chemical Controls Aging**

➤ NORMAL AGING of the body's cells apparently is governed by a thin surface layer of "life's most essential compound, ribonucleoprotein," says the American Cancer Society in announcing results of research by Dr. Albert I. Lansing of Washington University, St. Louis, Mo.

Dr. Lansing showed in earlier studies that fast-growing cells, including cancer, lack calcium. Calcium-loaded cells age and die; cancer cells, relatively free of calcium, go on dividing indefinitely.

In chemical tests and under the enormous magnifications of the electron microscope, Dr. Lansing has found that the surface of normal cells is covered with a thin layer of ribose nucleic acid and protein. This veneer seems to enable cells to take up several chemicals, including calcium, from its environment.

The ribonucleoprotein layer and enzyme systems on or inside the cell serve as a conveyor belt to bring into the cell the raw materials the cell transforms into aging and useful structures. When Dr. Lansing breaks up the layer with the enzyme, ribonuclease,

the cell fails to take up either calcium or another trace metal, strontium.

The electron microscope studies show that the cell (in this phase of his work Dr. Lansing uses clam eggs especially) is covered by thousands of tiny fingers that increase the surface area tenfold.

Science News Letter, May 23, 1953

## AERONAUTICS

**Navy Jet Will Soon  
See Action in Korea****See Front Cover**

➤ THE NAVY'S new Grumman Cougar jet, soon to move into action off Korea, is shown on the cover of this week's SCIENCE NEWS LETTER. The plane, rated for security reasons in the "over 650 miles per hour" class, is claimed to be superior in performance to the Russian-made MIG.

The Cougars, already in organized units, are swept-wing successors to the Panthers.

Science News Letter, May 23, 1953



## PSYCHOLOGY

## Preventing Breakdown

► THE OLD saying, "Time heals," is true, declares Dr. W. Edgar Gregory, associate professor of psychology at the College of the Pacific, Stockton, Calif.

In fact, he says that life situations, long blamed for precipitating mental breakdowns in neurotic persons, can actually play a healing part and help to prevent such breakdowns. He gives as one example a soldier on his way to an overseas theater. His company commander asked Dr. Gregory to speak to him because he had been brooding about something.

Dr. Gregory found this soldier thoroughly discouraged. He was worried about his wife and three children, did not see how they could live on the government allotment and what he could spare from his own pay, which was about one-half of what he had been earning before coming into the Army.

He also felt he was being unfairly treated because he was being sent overseas after less than three months in the Army whereas

many others who had been on duty for several years were permitted to remain behind. He was thoroughly convinced he would not return home alive.

He said nothing about suicide but several things led Dr. Gregory to believe he was thinking of it as a way of furnishing his family with some extra money. So Dr. Gregory told the company commander to watch him lest he do something drastic.

The company commander agreed but next day made him acting squad leader.

"Within a few days one could almost see his shoulders lift and a new light come into his eyes," reports Dr. Gregory. "He took his responsibilities seriously and soon his worries had left him almost completely. A new life situation had ended a very dangerous trend."

"Time does heal," he states in *Mental Hygiene* (April), "but we have to give time the best circumstances under which to work."

Science News Letter, May 23, 1953

## PUBLIC SAFETY

## Danger of Power Lines

► KITE SEASON is here and with it comes a warning on the danger of flying kites near electric lines. The warning is from the U. S. Rural Electrification Administration. It is prompted by records of children being killed through direct or indirect contact with electric power lines.

Children, warns the REA, should be taught the danger of flying kites near electric lines, trying to pull down anything from these lines, or touching lines that have broken and are on the ground or hanging loose from poles.

If kites or their strings tangle with power lines, the result may be fatal to the child flying the kite. It is a good idea for both farm and city children to understand this danger, because even the youngster who lives in town often does some backyard kite-flying, especially in spring.

A wet or damp kite string, or the wire sometimes used on kites, is an excellent conductor of electricity. Thus, if the kite hits a power line, the child holding the cord may be on the receiving end of a fatal charge of electricity. Children should be warned against trying to rescue a kite that gets away and blows onto power lines. They should leave it and parents should report it promptly to the power company or rural electric cooperative so a lineman can remove it.

Parents also should caution young folks against trying to remove anything in contact with electric lines. Never, under any circumstances, should they touch broken lines on the ground or hanging from poles.

These spell danger. Many children are killed every year from this one cause.

A broken line should be reported immediately to the nearest electric company. If possible, some adult should stand guard over fallen lines until the power can be shut off—in order to warn off anyone who may come near.

Science News Letter, May 23, 1953

## TECHNOLOGY

## Oven-Drying Tobacco Cuts Down Nicotine

► TOBACCO LOSES about six percent of its nicotine when it is dried in an oven, experiments at the Eastern Regional Research Laboratory of the Department of Agriculture indicate.

Air-dried tobacco, on the other hand, showed no significant loss of nicotine after 13 to 17 weeks of drying.

Nicotine loss was not great in the oven-dried tobacco when 12% to 15% of the moisture remained. But when moisture was reduced to three to five percent and the temperature was held high, nicotine reduction was marked. Chemical destruction of nicotine accounted for most of the loss; the rest passed off as vapor.

This investigation was reported by E. G. Beinhart, C. F. Woodward, C. O. Willits, C. Ricciuti, C. O. Badgett and J. J. Willaman.

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## Questions

ASTRONOMY—What causes twilight? p. 330.

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ENGINEERING—How is Mexico City going to be "jacked up"? p. 333.

• • •

FORESTRY—What is the most effective method for checking spread of oak wilt? p. 331.

• • •

GEOPHYSICS—How is the heat of the earth's core explained? p. 328.

• • •

MEDICINE—What is a major cause of traffic accidents? p. 329.

• • •

METEOROLOGY—Why are weathermen dubious about the value of rain making? p. 324.

• • •

PEDIATRICS—How do magnetized toys help cerebral palsied victims learn? p. 325.

• • •

PSYCHIATRY—How may wives drive husbands to drink? p. 329.

• • •

Photographs: Cover, Grumman Aircraft Engineering Corp.; p. 323, Public Health Service; p. 325, Crucible Steel; p. 326, Oak Ridge Institute of Nuclear Studies, Inc.; p. 336, Pyrene Manufacturing Co.

## INVENTION

## Patented Chemical Regulates Plant Growth

► A CHEMICAL compound which will either stimulate or impede the growth rate of a large variety of plants has now been patented.

The compound is one containing haloaryl sulfinic or thiosulfinic acids or their salts. The compounds containing under one percent of these acids work as growth stimulants or retardants. Higher concentrations than that so alter the growth characteristics of the plant that it dies. Such a compound thus can find use as a herbicide.

The inventor is William D. Stewart, Brecksville, Ohio, and he assigned his patent, number 2,632,698, to the B. F. Goodrich Co., New York.

The inventor says the compounds may be applied to seeds and tubers to stimulate germination and plant emergence or to inhibit sprouting or to stimulate development of roots. They may be applied to cuttings and transplants to stimulate root formation and root growth. The compounds can reduce the number of set fruit or delay or prevent premature drop of buds, leaves and fruit or fruit trees.

Another use contemplated in the patent is the fortifying of fertilizers and plant food. Leaf structure can be modified. The compounds will, it is claimed, induce parthenogenesis and thus aid in the development of seedless berries and fruit.

Science News Letter, May 23, 1953

# • New Machines and Gadgets •

For sources of more information on new things described, send a self-addressed stamped envelope to SCIENCE NEWS LETTER, 1719 N St., N.W., Washington 6, D. C., and ask for Gadget Bulletin 675. To receive this Gadget Bulletin without special request each week, remit \$1.50 for one year's subscription.

✿ **RODENT REPELLENT** chemicals can protect fiberboard shipping containers, multiwall bags, burlap and other packaging materials against rodents. Tests at a government laboratory revealed hungry rats got into untreated boxes containing food within 24 hours; treated cartons repelled them as long as 45 days. The chemicals can be worked into conventional coatings, binders and sizes now used by the paper, textile, twine or adhesive industries.

Science News Letter, May 23, 1953

✿ **RADIANT CERAMIC** heater can be safely placed in the household to beam warm infrared rays into "cold spots," or to warm up chilly rooms. Plugging into ordinary household electric outlets, the device itself does not get hot enough to burn children's fingers or clothes.

Science News Letter, May 23, 1953

✿ **KEY CASE** accommodates four keys and has an attached flashlight whose small cap glows in the dark. The flashlight uses two small-sized cells and throws a brilliant beam on keyholes, theater programs and the like. The case is made of leather, and the flashlight is solid brass with a lustrous gold finish.

Science News Letter, May 23, 1953

✿ **PUSHBUTTON FIRE** extinguisher, grand prize winner in a recent home-safety



show, has a one-pint capacity and puts out most gasoline, oil and grease fires as well as those due to defective electrical equipment. Using carbon tetrachloride as the basic fire-fighting ingredient, the compact extinguisher shoots a 25-foot stream. It is shown in the photograph.

Science News Letter, May 23, 1953

✿ **PARTY KIT** saves Mother a lot of trouble in preparing a party for Junior. The

kit contains distinctively styled napkins, drinking cups, a large table cover, plates, nut cups with stand-up figures, favors, balloons and hats, all carrying out a particular theme. Available to serve six or 12 persons, the kits' themes are circus, Indian, cowboy and birthday balloon.

Science News Letter, May 23, 1953

✿ **GARDEN INSECTICIDE** combines the advantages of Lindane and Aramite to control spider mites, aphids and principal insects of vegetable and flower gardens, the maker reports. Each application is said to have a residual control lasting several weeks.

Science News Letter, May 23, 1953

✿ **EXPANDING DINING** table also can be used as a buffet, desk or card table. With all leaves up, the table comfortably seats eight diners. Modernistic in design, the table has drawers at one end of its base and an adjustable shelf compartment at the other. The table is made of clear birch finished in a warm nutmeg tone.

Science News Letter, May 23, 1953

✿ **COLD-FOOD SERVER** set includes a food-holding cup that fits into a metal bowl which has a refrigerant sealed inside its walls. When chilled in a refrigerator freezing compartment to 10 degrees above zero or colder, the servers stay cold for a long time, making the sets especially good for serving ice cream, sherbets, fruits and shrimp cocktails.

Science News Letter, May 23, 1953



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5-23-53

## Do You Know?

Brine shrimp eggs are smaller than the head of a pin.

The average American consumes about 100 pounds of fat annually.

There are 156 major fires out of control in the nation's inactive coal deposits.

Cold GR-S synthetic rubber now can be made in about 20 minutes; previous methods required from 12 to 14 hours.

Standard traffic signs have been developed to speed up taxiing on large and small airports, and to reduce radio communication time between plane and control tower.

Ink-blot tests used by psychologists in the Rorschach test are more stimulating and imagination-invoking when they are dark gray on a white background than when they are black on white.